



Bethel BIA Administration Site -- Fuel Spill

Alaska Department of Environmental Conservation • Division of Spill Prevention and Response

Site Description

The Bethel BIA Administration site was first developed in 1957 by the US Air Force as part of the White Alice Communication System. It was activated in 1958 and deactivated in 1979. The BIA acquired a portion (125 acres) of the site in 1963 from the USAF including barracks, buildings, fuel tanks, water treatment plant and sewage lagoon. The boundary of the BIA site was reduced to a 45 acre site in 1985. The site was further divided in 1987 whereby 18.29 acres were conveyed to the US Fish & Wildlife Service and the remaining 27 acres were to be conveyed to the Yukon Kuskokwim Health Corporation. BIA operated the site until 1990.

During the winter of 1992-93, it was estimated that approximately 106,000 gallons of diesel fuel product was released from a 300,000 gallon storage tank when an elbow joint ruptured leading from the tank. The fuel product reportedly flowed down the outside of the containment berm and was initially contained by the snow in a flat area just down hill from the release point. As spring breakup occurred, the diesel contamination spread away from the area in drainage channels and across the tundra surface to a seasonal stream leading into a tundra lake.

Threats and Contaminants

The chemicals of potential concern are associated with diesel fuel product. The human health and ecological risk factors for polynuclear aromatic hydrocarbons (PAH's); benzene, toluene, ethylbenzene, and xylene (BTEX); and the diesel range organic (DRO) compounds are being evaluated.

Public Health and Environmental Concerns

Based on a review of the exposure pathways, the most likely human exposure to contamination is through the collection of edible plants and game birds (ptarmigan). However, a berry study

determined that contaminants were not impacting the edible berries in the area and therefore did not pose a risk to human health or other ecological receptors. The ingestion / inhalation pathway was less likely because the contamination is located beneath the vegetative cover minimizing exposure. The levels of contamination remaining at the site (above the established cleanup level) do not pose a risk unless they are exposed or a pathway to receptors is created.

Response Actions

An emergency response action consisted of containment and recovery in the stream primarily using skimmers and containment dams. An access road was constructed from the spill site to the tundra lake, roughly following parallel to the seasonal stream.

It was estimated that 63,000 gallons of fuel were recovered; 15,900 gallons evaporated; and 27,100 gallons were unaccounted for.

An October 1998 site assessment concluded contaminant levels had not decreased significantly since 1994. Ecology & Environment, Inc. prepared a report in April 1999 that proposed risk based cleanup levels and corrective action alternatives based on site specific data from the project area. They also conducted a study of berries in the area to determine any risk posed by their consumption and concluded there was no risk.

Current Status

The human and ecological risks posed by the 1992-1993 diesel fuel release at the Bethel BIA Administration site have been evaluated by ADEC. A risk based cleanup level of 2,300 mg/kg DRO was established for this site based on it being protective of human health. It is also considered a cleanup level protective of animal species at the site based on the results of the berry

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study. The cleanup alternative(s) proposed for this site may involve one (or more) options based on the site specific conditions of the area.

Cleanup alternatives that excavate contaminated material may cause more harm than good and, therefore, may not be considered practicable or protective. An in-situ treatment method might be applicable provided a viable method is available.

An "Equitable Servitude" agreement between the property owner and the State of Alaska will be attached to the property in order to identify the restrictions and/or prohibitions on access and use until the established cleanup levels are met.